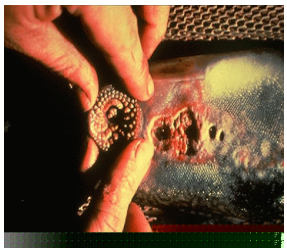



The sea lamprey attaches to deepwater fish and feeds on the fish until satiated or until the fish dies.

Green crabs are a recent invader of the Pacific coast, expanding rapidly northward and threatening important shellfisheries


Zebra mussels are highly invasive and colonize surfaces such as docks, boat hulls, water intake pipes and native mollusks.

# Aquatic Nuisance Species

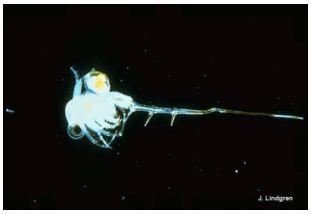
## NOAA Request

NOAA is requesting an increase of $200,000 to develop and promote measures to prevent the spread of aquatic nuisance species which present serious threats to the Nation's aquatic ecosystems and related economies. This request is included in the Marine Environmental Research line of the Office of Oceanic and Atmospheric Research (OAR) budget.

## Background

Nonindigenous species introductions are increasing both in frequency and in the extent of damage they cause to the Nation's environment and economy. Although the most prominent of these has been the zebra mussel in the Great Lakes, nonindigenous species have truly become a nationwide problem which threatens many marine and Great Lake ecosystems. While some intentional introductions may have had beneficial effects, there are many nonindigenous species that are already present in U.S. waters which are currently causing problems for the ecosystems that they are invading. These species include the European green crab, Japanese shore crab, zebra mussel, spiny water flea, sea lamprey, round goby, Eurasian ruffe, rusty crayfish and the aquatic plant *Hydrilla*. Nonindigenous species are often transported from region to region in the ballast water of commercial vessels and on the hulls of small boats. These species may cause significant damage to coastal resources and the economies that depend upon them by competing with native species for habitat and food as well as impacting water intake pipes, fishing nets, boat hulls, and other structures through colonization.

Since 1990, Congress has provided funding through Sea Grant and the Great Lakes Environmental Research Laboratory to combat the invasion of nonindigenous species in the Great Lakes and other freshwater environments. Nonindigenous species introduced into U.S. coastal and marine environments have the potential to cause serious economic damage. For example, zebra mussels pose significant social, economic and ecological concerns for the Great Lakes and other inland




The spiny water flea's direct competition with young fish for food has the potential to alter the food webs of the Great Lakes.


The round goby takes over prime spawning sites traditionally used by native species. It has been found in the Great Lakes.


The invasive plant *Hydrilla* can completely choke entire lakes and public water supplies. It has now spread throughout Florida and most southern states, as well as California, Delaware, and the District of Columbia.

North American waters. The prolific mollusk tends to biofoul and restrict the flow of water through intake pipes, disrupting supplies of drinking, cooling, processing and irrigating water for homes, industry and farms. The mussel also attaches to boat hulls, docks, locks, breakwaters and navigation aids, increasing maintenance costs and impeding waterborne transport. The National Invasive Species Act (NISA) requires NOAA to respond through research, outreach, prevention and control efforts.

## Proposed Actions

NOAA's Sea Grant Program and the Great Lakes Environmental Research Laboratory will address priority items under NISA including: (1) Reducing the impacts of aquatic nuisance species in five marine regions (Chesapeake Bay, Gulf of Mexico, Pacific Coast, Atlantic Coast and San Francisco Bay-Delta Estuary) through a national competitive program to improve measures to prevent and control marine nonindigenous species introductions; (2) Developing improved or alternative technologies for ballast water exchange by the shipping industry to reduce the risk of new species introductions; and (3) Supporting efforts by the Aquatic Nuisance Species Task Force (co-chaired by NOAA and the U.S. Fish and Wildlife Service) to continue developing species-specific control programs and coordinating national efforts to prevent introductions of nonindigenous species into coastal environments.

## Benefits

These activities will reduce the rate at which nonindigenous species invade and disrupt ecosystems. Programs that increase public and industry awareness of specific behaviors that spread nonindigenous species will be used in conjunction with the implementation of preventive procedures such as ballast water exchange which is timed to prevent the transfer of exotic species from place to place. Additionally, new technologies and techniques will be developed that will reduce or prevent future infestations that could cause damage to aquatic ecosystems and the economies tied to them.

For more information, please contact Andrew Larkin in NOAA's Office of Legislative Affairs at 202-482-4630.